

Claims:

1. A method for preparing oxytitanium phthalocyanine as a charge generating material, comprising the steps of:

- 5 homogeneously mixing an oxytitanium phthalocyanine crude with an organic solvent while microwave energy having a frequency of 0.1~100 GHz and a power of 10~3,000W and ultrasonic wave energy having a frequency of 1~1,000 kHz and a power of 10~5,000W are applied thereto; and
 reacting the mixture at 30~100°C for 0.5~5 hours.

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2. The method according to claim 1, wherein the oxytitanium phthalocyanine crude is dissolved in an acid at room temperature or more and recrystallized, or dry- or wet-ground before use.

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3. The method according to claim 2, wherein the acid is sulfuric acid, phosphoric acid, or a halogenated carboxylic acid.

4. The method according to claim 2, wherein the solvent for the recrystallization is water, an aliphatic or aromatic alcohol, a ketone, an ether, an ester, or a mixed solution thereof.

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5. The method according to claim 1, wherein the organic solvent is a halogenated benzene, a halogenated naphthalene, or an aqueous solution thereof.

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6. The method according to claim 5, wherein the halogenated benzene or

halogenated naphthalene is benzene or naphthalene substituted with 1 to 4 halogen atoms selected from chlorine, fluorine, bromine, and iodine.

7. The method according to claim 1, wherein the reaction is carried out at a
5 temperature of 50~70°C.

8. The method according to claim 1, wherein the reaction time is in the range of from 10 minutes to 5 hours.

10 9. The method according to claim 1, wherein the oxytitanium phthalocyanine crude shows one X-ray diffraction peak at a Bragg angle of $27.2 \pm 0.2^\circ$.

10. An apparatus for preparing oxytitanium phthalocyanine as a charge generating material, comprising: a magnetron capable of generating a frequency of
15 0.1~100GHz and a power of 100~3,000W; a mode stirrer for making the wavelength of microwaves uniform in a microwave container; a PID type temperature controller for accurately measuring and controlling the temperature of reactants; a K-type thermocouple shielded from microwaves; a condenser; an agitator, the thermocouple, the condenser and the agitator being inserted into three openings
20 formed at a top of the microwave container; an ultrasonic tip inserted into an opening formed at a bottom of the microwave container; a Pyrex container into which the reactants are introduced; and a solvent tank,

wherein an oxytitanium phthalocyanine crude is homogeneously mixed with an organic solvent within the Pyrex container while microwave energy having a
25 frequency of 0.1~100 GHz and a power of 10~3,000W and ultrasonic wave energy

having a frequency of 1~1,000 kHz and a power of 10~5,000W are applied thereto, and the reactants are reacted with each other at a temperature of 30~100°C for 0.5~5 hours while the temperature of the reactants is accurately controlled by the K-type thermocouple and the PID type temperature controller.

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11. The apparatus according to claim 10, wherein the oxytitanium phthalocyanine crude is dissolved in an acid at room temperature or more and recrystallized, or dry- or wet-ground before use.

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12. The apparatus according to claim 11, wherein the acid is sulfuric acid, phosphoric acid, or a halogenated carboxylic acid.

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13. The apparatus according to claim 11, wherein the solvent for the recrystallization is water, an aliphatic or aromatic alcohol, a ketone, an ether, an ester, or a mixed solution thereof.

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14. The apparatus according to claim 10, wherein the organic solvent is a halogenated benzene, a halogenated naphthalene, or an aqueous solution thereof.

15. The apparatus according to claim 14, wherein the halogenated benzene or halogenated naphthalene is benzene or naphthalene substituted with 1 to 4 halogen atoms selected from chlorine, fluorine, bromine, and iodine.

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16. The apparatus according to claim 10, wherein the reaction is carried out at a temperature of 50~70°C.

17. The apparatus according to claim 10, wherein the reaction time is in the range of from 10 minutes to 5 hours.

5 18. The apparatus according to claim 10, wherein the oxytitanium phthalocyanine crude shows one X-ray diffraction peak at a Bragg angle of $27.2 \pm 0.2^\circ$.

10 19. An oxytitanium phthalocyanine charge generating material prepared by the method according to claim 1 wherein the charge generating material shows X-ray diffraction peaks at Bragg angles of $7.2 \pm 0.2^\circ$, $9.6^\circ \pm 0.2^\circ$, $11.7^\circ \pm 0.2^\circ$, $12.7^\circ \pm 0.2^\circ$, $13.4^\circ \pm 0.2^\circ$, $14.1^\circ \pm 0.2^\circ$, $14.8^\circ \pm 0.2^\circ$, $18.0^\circ \pm 0.2^\circ$, $18.4^\circ \pm 0.2^\circ$, $22.3^\circ \pm 0.2^\circ$, $23.4^\circ \pm 0.2^\circ$, $24.1^\circ \pm 0.2^\circ$, $24.5^\circ \pm 0.2^\circ$, and $27.2^\circ \pm 0.2^\circ$.

15 20. A photoconductor produced using the oxytitanium phthalocyanine charge generating material according to claim 19.